WHAT IS CLAIMED IS:

1   1.   A method for wireless association between a controller and a wireless node, the

2   method comprising:

3   transmitting association request data from the wireless node, the association

4   request data including unique identification (ID) data for the wireless node;

5   receiving the association request data at the controller and, in response,

6   sending association ID data assigned to the wireless node by the controller using the

7   unique ID with the association ID data to identify the wireless node as the intended

8   recipient of the association ID data, the controller storing the association ID data for use in

9   sending wireless signals to the wireless node; and

10   receiving and storing the association ID data at the wireless node as a

11   function of the unique ID, thereby associating the wireless node with the controller.

1   2.   The method of claim 1, further comprising:

2   using the stored association ID data at the wireless node to identify

3   incoming wireless signals from the controller as signals intended for the wireless node.

1   3.   The method of claim 1, further comprising:

2   using the association ID data at the controller to identify incoming wireless

3   signals sent from the wireless node as coming from the wireless node.

1   4.   The method of claim 1, wherein assigning association ID data includes

2   assigning network ID data corresponding to a network of wireless nodes served by the

3   controller.

1   5.   The method of claim 4, further comprising selecting the network ID data by

2   parsing network ID data in use within range of the controller and selecting network ID data

3   that is not in use within range.

1   6.   The method of claim 1, wherein assigning association ID data includes

2   assigning slave ID data that is exclusively assigned to the wireless node among wireless

3   nodes within a network of wireless nodes.

1   7.   The method of claim 1, wherein assigning association ID data includes

2   assigning master ID data that is exclusive to the controller relative to controllers within

3   communication range of the wireless node.

1   8.   The method of claim 7, after assigning association ID data, further

2   comprising replacing the controller with a new controller, storing the association ID data at

3   the new controller and using the master ID data to identify the new controller.

1   9.   The method of claim 1, prior to transmitting association request data,

2   further comprising inputting an association request at the wireless node and wherein

3   transmitting association request data includes transmitting the association request data in

4   response to the association request input.

1   10.   The method of claim 9, further comprising entering an association mode at

2   the wireless node for a selected time period and exiting the association mode after the

3   selected time period has expired, wherein receiving and storing the association ID data at

4   the wireless node includes receiving and storing the association ID data if the wireless

5   node is in the association mode.

1   11.   The method of claim 9, further comprising inputting an association request

2   input at the controller and wherein sending association ID data includes sending the

3   association ID data in response to both the association request input at the controller and

4   the received association request data.

1   12.   The method of claim 11, further comprising entering an association mode at

2   the controller for a selected time period and exiting the association mode after the selected

3   time period has expired, wherein receiving the association request data at the controller

4   and, in response, sending association ID data includes sending association ID data if the

5   controller is in the association mode.

1   13.   The method of claim 1, after receiving and storing the association ID data at

2   the wireless node, replacing the wireless node with a new wireless node by storing the

3   association ID data at the new wireless node.

1   14.   The method of claim 1, further comprising sending messages to the wireless

2   node using the association ID data to identify the wireless node as the intended recipient of

3   the messages and using the messages at the wireless node to control equipment coupled

4   thereto.

1   15.   The method of claim 1, prior to sending association ID data, further

2   comprising:

3   sending a conflict checking message including a network ID to be used with

4   the association ID;

5   in response to receiving a network ID conflict response of another controller

6   to the conflict checking message, selecting a new network ID to be included with the

7   association ID and re-sending a conflict checking message; and

8   in response to not receiving a network ID conflict response, sending the

9   association ID data.

1   16.   The method of claim 1, further comprising:

2   using the controller to monitor wireless conflict checking messages from

3   other controllers within range of the controller; and

4   in response to receiving a conflict checking message including a network ID

5   that is in use by the controller, sending a conflict response.

1   17.   A method for wirelessly communicating between a controller and a wireless

2   node, the method comprising:

3   transmitting association request data from the wireless node, the association

4   request data including a unique device ID for the wireless node;

5   receiving the association request data at the controller and, in response,

6   sending an association ID assigned to the wireless node by the controller using the unique

7   device ID with the association ID to identify the wireless node as the intended recipient of

8   the association ID, the controller storing the association ID for use in sending wireless

9   messages to the wireless node;

10   receiving and storing the association ID data at the wireless node as a

11   function of the unique ID;

12   using the stored association ID data at the wireless node to identify

13   incoming wireless messages from the controller as messages intended for the wireless

14   node; and

15   using the association ID data at the controller to identify incoming wireless

16   messages sent from the wireless node.

1   18.   The method of claim 17, wherein storing association ID data at the

2   controller includes storing range limits for association IDs of wireless nodes assigned to

3   the controller, and wherein identifying messages sent from the wireless node to the

4   controller with the association ID data includes determining whether the association ID

5   data is within the stored range limits.

1   19.   The method of claim 18, further comprising:

2   in response to the association ID data being within a predetermined range,

3   processing the association ID data at the controller; and

4   in response to the association ID data being outside of the predetermined

5   range, ignoring the association ID data at the controller.

1   20.   The method of claim 17, wherein assigning association ID data includes

2   assigning network ID data corresponding to a network of wireless nodes served by the

3   controller and wherein using the association ID data at the controller to identify incoming

4   wireless messages sent from the wireless node includes determining, at the controller, that

5   the network ID data corresponds to a network served by the controller.

1   21.   The method of claim 17, wherein assigning association ID data includes

2   assigning master ID data that is exclusive to the controller relative to controllers within

3   communication range of the wireless node and wherein using the association ID data at the

4   controller to identify incoming wireless messages sent from the wireless node includes

5   determining, at the controller, that the master ID data corresponds to the controller's

6   master ID data.

1   22.   The method of claim 17, wherein using the stored association ID data at the

2   wireless node to identify incoming wireless messages includes identifying the incoming

3   wireless messages from a plurality of incoming wireless messages traversing shared media

4   that is susceptible to the transmission of multiple wireless messages.

1   23.   A method for controlling a plurality of wireless thermostats in

2   communication range with at least one gateway, each wireless thermostat coupled to

3   control HVAC type equipment, the method comprising:

4   transmitting association request data from a wireless thermostat, the

5   association request data including unique identification (ID) data for the wireless

6   thermostat;

7   receiving the association request data at the gateway and, in response,

8   sending gateway-owned association ID data assigned to the wireless thermostat by the

9   gateway using the unique ID to identify the wireless thermostat as the intended recipient of

10   the association ID, the gateway storing the association ID data for use in sending wireless

11   messages to the wireless thermostat and to identify incoming wireless messages sent from

12   the wireless thermostat;

13   receiving and storing the gateway-owned association ID data at the wireless

14   thermostat as a function of the unique ID to identify incoming wireless messages from the

15   gateway as messages intended for the wireless thermostat;

16   communicating control messages from the gateway to the wireless

17   thermostat using the association ID data to identify the wireless thermostat as the intended

18   recipient of the control messages; and

19   at the wireless thermostat, accepting the control messages as function of the

20   association ID data and, in response to the control messages, controlling HVAC equipment

21   coupled to the wireless thermostat.

1   24.   The method of claim 23, further comprising using the association ID to

2   label compliance data sent from the wireless thermostat to identify the source of the

3   compliance data, the compliance data being indicative of user compliance with the utility

4   control messages.

1   25.   The method of claim 24, further comprising sending the compliance data

2   from the gateway to a local utility provider.

1   26.   The method of claim 23, wherein communicating control messages from the

2   gateway includes communicating control messages in response to control messages

3   received at the gateway from a local utility company.

1   27.   The method of claim 23, wherein communicating control messages from the

2   gateway includes broadcasting information from the gateway to a plurality of wireless

3   thermostats using a network ID included with the association ID, each of the plurality of

4   wireless thermostats being adapted to receive the broadcast information as a function of the

5   network ID portion of the association ID.

1   28.   The method of claim 27, wherein each wireless thermostat is adapted to

2   respond to the broadcast information as a function of user inputs received at the wireless

3   thermostat and to report a condition of the response to the gateway using the association ID

4   to identify the wireless thermostat from which the reported condition was sent.

1   29.   A system for wireless association between a controller and a wireless node,

2   the system comprising:

3   means for transmitting association request data from the wireless node, the

4   association request data including unique identification (ID) data for the wireless node;

5   means for receiving the association request data at the controller and, in

6   response, for sending association ID data assigned to the wireless node by the controller

7   using the unique ID with the association ID data to identify the wireless node as the

8   intended recipient of the association ID data, the controller storing the association ID data

9   for use in sending wireless signals to the wireless node; and

10   means for receiving and storing the association ID data at the wireless node

11   as a function of the unique ID, thereby associating the wireless node with the controller.

1   30.   A system for wireless communication, the system comprising:

2   a controller;

3   a wireless node;

4   the wireless node being configured and arranged for transmitting

5   association request data including unique identification (ID) data for the wireless node;

6   the controller being configured and arranged for receiving the association

7   request data and, in response, for sending association ID data assigned to the wireless node

8   by the controller using the unique ID with the association ID data to identify the wireless

9   node as the intended recipient of the association ID data, the controller storing the

10   association ID data for use in sending wireless signals to the wireless node; and

11   the wireless node being configured and arranged for receiving and storing

12   the association ID data as a function of the unique ID, thereby associating the wireless

13   node with the controller.

1   31.   The system of claim 30, wherein the wireless node is configured and

2   arranged to use the stored association ID data at the wireless node to identify incoming

3   wireless signals from the controller as signals intended for the wireless node.

1   32.   The system of claim 30, wherein the controller is configured and arranged
2   to use the association ID to identify incoming wireless signals sent from the wireless node
3   as coming from the wireless node.

1   33.   The system of claim 30, wherein the controller is configured and arranged
2   to:
3   prior to sending association ID data, send a conflict checking message
4   including a network ID to be used with the association ID;
5   in response to receiving a network ID conflict response of another controller
6   to the conflict checking message, select a new network ID to be included with the
7   association ID and re-send a conflict checking message; and
8   in response to not receiving a network ID conflict response, send the
9   association ID data.